PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Hongjie CAO et al.	Docket: SPG 6613 PDUS
Serial No.: 10/723,341	Examiner: Lakshmi Sarada Channavajjala
Filing Date: November 26, 2003	Group Art Unit: 1611
For: USE OF ACRYLATES COPOLYMER AS WATERPROOFING AGENT IN PERSONAL CARE APPLICATIONS	Confirmation Number: 8212

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

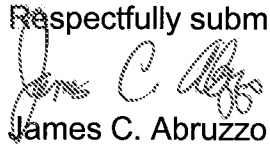
BRIEF ON APPEAL

Further to the Notice of Appeal filed July 22, 2010, Appellants are submitting this Appeal Brief for the above-identified application. Appellant hereby requests reconsideration and reversal of the Final Rejection of claims 1, 2, 8-10 and 27-29.

In compliance with 37 C.F.R. § 41.37(a)(1), this Brief is being timely filed within the time allowed for response to the action from which the Appeal was taken, with a two-month extension of time pursuant to 37 C.F.R. § 1.136(a)(1).

The fees for filing a Brief in support of an Appeal under 37 C.F.R. § 40.20(b)(2), together with any extension fee required in connection with the filing of this Brief, are provided herewith.

Respectfully submitted,



James C. Abruzzo
Attorney for Appellant(s)
Reg. No. 55,890

Akzo Nobel Inc.
Legal, IP & Compliance
120 White Plains Road, Suite 300
Tarrytown, NY 10591
(914) 333-7448

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I. INTRODUCTION

Pursuant to the provisions of 35 U.S.C. §134 and 37 C.F.R. §1.191, this paper is submitted as a brief setting forth the authorities and arguments upon which Appellants rely in support of the Appeal from the Final Rejection of claims 1, 2, 8-10 and 27-29 entered in the above-identified patent application on February 22, 2010 and maintained in the Advisory Action mailed June 10, 2010.

II. REAL PART IN INTEREST

The real part in interest is Akzo Nobel nv, Arnhem, The Netherlands.

III. RELATED APPEALS AND INTEREFERENCES

There are no prior or pending appeals, interferences, or judicial proceedings known to Appellant, the Appellants' legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

IV. STATUS OF THE CLAIMS

Claims 1, 2, 8-10 and 27-29 are currently pending, with claims 3-7 and 11-26 having been canceled. Claims 1, 2, 8-10 and 27-29 stand rejected and are appealed.

V. STATUS OF THE AMENDMENTS

An amendment after the non-Final Rejection (dated July 14, 2009) was filed on November 16, 2009. That amendment has been entered. A response to the Final Rejection (dated June 10, 2010) was submitted on May 25, 2010 and has been considered, as indicated in the Advisory Action dated April 7, 2010. No claims were amended in the May 25 Response.

VI. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention generally relates to a personal care composition comprising water-proofing effective amount of a water dispersible acrylate copolymer emulsion. Citations to the specification providing support for the recited claim limitations are stated in this section in parentheses. An exemplary embodiment of the personal care composition comprises a water-proofing effective amount of a water dispersible acrylate copolymer emulsion (page 3, lines 10-12; page 3, line 31; page 5, lines 14-21). The acrylate copolymer emulsion has essentially no hydrophobic monomers having an alkyl group of greater than or equal to C8 (see page 3, lines 20-22). In addition, the acrylate copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing (see page 4, lines 3-9). The acrylate copolymer comprises from about 38% to about 48% butyl acrylate, from about 39% to about 49% methyl methacrylate, and from about 8% to about 18% methacrylic acid, by weight of the copolymer (see page 3, lines 28-30).

Regarding dependent claim 2, the composition of claim 1, wherein the acrylate copolymer is anionic at a pH above about 4 (see page 3, lines 22-24).

With respect to dependent claim 8, the composition of claim 1 wherein the composition is a suncare composition (see page 4, lines 20-27).

Regarding dependent claim 9, the composition of claim 1 wherein the acrylate copolymer is not neutralized (see page 4, lines 10-11).

With respect to dependent claim 10, the composition of claim 1 wherein the composition is a skin care composition (see page 4, line 19).

Regarding claim 27, the composition of claim 1 wherein the composition is an emulsion (see page 4, lines 3-6).

With respect to claim 28, the composition of claim 1 further comprises an anionic surfactant (see pages 6, line 1 to page 7, line 36).

Regarding claim 29, the composition of claim 1 wherein the acrylate copolymer is in the form of a 45% polymer-in-water emulsion (see page 3, lines 31-32).

VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on Appeal are summarized as follows:

1.) Whether claims 1, 2, 8-10, 27-29 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 4,085,264 to Seib *et al.* ("Seib") in view of U.S. Patent No. 4, 172,122 to Kubik *et al.* ("Kubik").

2.) Whether claims 1, 2, 8-10 and 27-29 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,221,389 to Cannell *et al.* in view of Seib and Kubik.

VIII. ARGUMENT

As set forth in the final Official Action dated June 10, 2010, the Office rejects claims 1, 2, 8-10 and 27-29 as unpatentable over Seib in view of Kubik, and claims 1, 2, 8-10 and 27-29 as unpatentable over Cannell in view of Seib and Kubik. A summary of each of the rejections and Appellants' responses to said rejections follows.

As a preliminary matter, the Office at page 11 of the Response to Arguments Section of the Final Office Action states, "[w]ith respect to the polymer emulsion, it is the position of the examiner that the instant polymer is not an emulsion and instead the polymer is added to a composition to render an emulsion." In the Advisory Action, at page 2, the Office maintains this position stating that, "even though Seib does not teach an emulsion of the polymer, instant claims can be interpreted as a composition in the form of an emulsion where the water dispersible acrylate copolymer has been added (resulting in an emulsion)."

Appellants respectfully disagree with the Office's position and submit that such a position is not correct and is contrary to Appellants' claimed invention. Appellants' invention, as recited in claim 1, among other limitations, recites:

> A personal care composition comprising a water-proofing effective amount of a water dispersible acrylate copolymer emulsion having essentially no hydrophobic monomers having an alkyl group of greater than or equal to C8. . . . (emphasis added).

Accordingly, claim 1 is directed to a personal care composition which includes a water-proofing effective amount of a water dispersible acrylate copolymer emulsion. That is, the acrylate copolymer is an emulsion. While the Office is charged with examining claims in light of their broadest reasonable interpretation, such construction must be reasonable and be consistent with the specification. See *In re Suitco Surface, Inc.*, 2009-1418, at 7 (Fed. Cir. April 14, 2010). "[C]laims should always be read in light of the specification and teachings in the underlying patent. *Id. (*citing *Schriber-Schroth Co. v. Cleveland Trust Co.* 311 U.S. 211, 217 (1940) ("The claims of a patent are always to be read or interpreted in light of its specifications.")) By construing the claimed acrylate

copolymer emulsion to be interpreted to mean a "water dispersible acrylate copolymer" that has been added to a composition that is in the form of an emulsion, the Office has unreasonably expanded the meaning of this term to be inconsistent with the specification. According to the specification, at page 3, lines 31-32, "[t]he acrylate copolymer is typically provided in the form of an emulsion which is a thin, non-viscous liquid as a 45% polymer-in-water emulsion." This differentiates embodiments where the acrylate copolymer is provided in a powder form. (See page 3, line 32-33). This is also distinguishable from personal care compositions that are emulsions, such as sunscreen emulsions and sunscreen emulsion sprays. Further, the Examples illustrate the use of, for example, Dermacryl® AQF polymer, which is described as an acrylates copolymer, 45% active polymer-in-water emulsion. (See page 5, lines 32-34). In Example 3, this acrylates polymer emulsion was added as an ingredient to an emulsion spray sunscreen. Accordingly, Appellants submit that when read in light of the teachings of the specification, personal care compositions in the form of emulsions are different from acrylates copolymer emulsions. For the Office to interpret the claims as the Office has in this instance is thus unreasonably broad and not consistent with the specification.

In addition, dependent claim 29 recites that the acrylate copolymer is in the form of a 45% polymer-in-water emulsion. Thus, notwithstanding that claim 1 has been improperly interpreted such that the instant polymer is considered to not be an emulsion, the Office has apparently not considered that dependent claim 29 further defines the acrylate copolymer emulsion to be in the form of a 45% polymer-in-water emulsion. Thus, the acrylate copolymer emulsion of claim 29 cannot also be interpreted to read on a personal care composition that is an emulsion that includes an acrylate copolymer. As recited in dependent claim 27, the personal care composition is limited to an emulsion.

It is also noted that claim 1 requires that the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing. Appellants submit that if an acrylates copolymer were to be included in a final composition that is an emulsion, such acrylates copolymer, being

insoluble in water, would, based on the teachings of the cited art, require additional processing to form the emulsion, thus rendering the Office's interpretation inconsistent with claim 1 itself.

In view of the above errors in which the Office has misconstrued Appellants' claims, Appellants respectfully request that the rejection of the appealed claims of record should be reversed.

A. Rejection of Claims 1, 2, 8-10 and 27-29 under 35 U.S.C. 103(a) over Seib in view of Kubik

Notwithstanding the above, in the Final Office Action the Office alleges that Seib discloses copolymers similar to that of the instant invention, but that Seib fails to teach the exact percentages of the claimed polymers, particularly with respect to butyl acrylate. (Office Action, page 4). Further, the Office acknowledges that Seib "does not specifically recite an emulsion. . . ." (Office Action, page 5).

To supply the missing features, the Office turns to Kubik. The Office alleges that Kubik teaches a sunscreen composition comprising an oil-base, water-insoluble (UV) light absorbing materials which is soluble in the oil and a water insoluble acrylate polymer. (Office Action, page 5). The Office asserts that Kubik teaches adding water to the polymer containing oil based compositions to prepare emulsions. The Office further asserts that the insoluble polymers include alkyl esters of 6 to 18 carbon atoms and exclude lower alkyl esters, implying that the lower alkyl esters impart oil insoluble characteristics to the composition. (Office Action, page 6). The Office alleges that Kubik teaches that the polymers may be prepared by any standard bulk, solution or emulsion polymerization, with the latter two being preferred. (Office Action, page 6). However, the Office acknowledges that Kubik "fails to explicitly teach the acrylate polymer of claimed monomer distribution." (Office Action, page 6). The Office ultimately alleges that it would have been obvious to employ the acryate polymers of Seib as emulsifiers in preparing emulsion compositions and also impart effective film forming and thus sunscreen effects. (Office Action, page 6). The Office further asserts

that a skilled artisan would have prepared acrylate film forming polymers of Seib by employing any of the known methods such as standard bulk, solution or emulsion polymerization because a "skilled artisan" (not necessarily one of ordinary skill in the art) would have understood that according to Kubik the film forming properties and emulsifying properties are unaffected by the method of preparation. (Office Action, page 7).

In the Advisory Action, the Office states that "a skilled artisan would expect (without the instant roadmap) that the polymer prepared by any of the methods suggested would still result in a film that binds UV light absorber and resists water removal." Further, the Office alleges that the motivation to modify the polymer of Seib with Kubik comes from the teachings of Kubik.

B. Response to Rejection of Claims 1, 2, 8-10 and 27-29 under 35 U.S.C. § 103(a) based on Seib in view of Kubik

As acknowledged by the Office, Seib fails to disclose or suggest its polymer in the form of an emulsion, although the Office's position is that Seib's copolymers are "similar" to that of the instant invention. As further acknowleged by the Office, Kubik fails to disclose a polymer such as recited in claim 1, but mentions that its polymers may be prepared by any standard bulk, solution or emulsion polymerization, with the latter two being preferred. As noted above, Kubik does disclose that its film forming polymers can be made by different methods and as such, it can be inferred from Kubik that such disclosure teaches that the film forming properties and emulsifying properties are unaffected by the method of preparation. Contrary to the Office's assertion, however, such lack of disclosure fails to support the Office's alleged *prima facie* case of obviousness.

As gained from the alleged combination of Seib and Kubik, Seib fails to disclose a polymer in the form of an emulsion. Kubik discloses that its polymers can be made by different methods, one no more desirable than the others. Further, the general

guidance to which the Office cites in Kubik regarding the use of acrylate copolymers employed in sunscreen compositions for water repellant effect and binding UV light absorbent effects fails to establish why one of ordinary skill in the art would have prepared the particular polymer of Seib and do so in the form of an emulsion rather than in the forms taught by Seib. As the Office admits, there appears to be nothing in Kubik to suggest that of the different forms, one would have been more desirable than the others. Thus, based on the combination of Seib and Kubik, there appears to be no indication to one of ordinary skill in the art that the form of the polymer of Seib would even need to be modified to be used in Kubik. Accordingly, without Appellants' own specification, one of ordinary skill in the art would have had no reason to modify the form of the polymer of Seib, much less make Seib in the form of an emulsion, based on the general teachings of Kubik.

Indeed, neither Seib nor Kubik appear to have recognized or suggested that by including an acrylate copolymer emulsion as an ingredient in a personal care composition, the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing. Thus, an acrylate copolymer emulsion as claimed by Appellants is particularly beneficial because it provides a water proofing effect to the personal care composition, and these acrylate copolymer emulsions are more readily incorporated into the water (continuous) phase of personal care compositions without the need for any additional processing.

Furthermore, Seib teaches "[i]t is an object of the present invention to provide a film-forming agent which, though readily soluble in ethanol, isopropanol and methylene chloride, has a low water absorption . . . ." (Seib, col. 1, lines 36-41). In contrast, Kubik teaches that "[p]rior art compositions utilizing polymers or polymeric film formers suffer from a number of disadvantages." (Seib, col. 1, lines 66-67) Specifically, Kubik identifies that "the compositions are generally applied from alcoholic solutions, which can be irritating and drying to the skin, difficult to apply evenly, and which provide minimimal moisturization. Furthermore, the resulting films tend to provide poor wet abrasion resistance." (Seib, col. 2, lines 3-8). Accordingly, where Kubik disparages the

film formers and in particular those applied from alcoholic solutions, such as those clearly identified as being those disclosed in Seib, Appellants submit that Kubik teaches away from Seib. Accordingly, one of ordinary skill in the art would not have combined the references of Kubik and Seib.

Although in the Advisory Action, the Office states that this argument was not persuasive "because Kubik does not cite Seib's teachings", Appellants submit that whether Kubik cites Seib's teachings, while perhaps relevant, is not determinative in deciding the issue of whether Kubik teaches away from Seib. Appellants submit, therefore, that the Office's rationale for finding Appellants' argument not persuasive is improper.

In addition, as recited in claim 1, the claim is directed to a personal care composition comprising a water-proofing effective amount of water dispersible acrylate copolymer emulsion, among other features. Thus, as understood from claim 1, the acrylate copolymer emulsion is water dispersible. That is, the acrylate copolymer emulsion is an emulsion that is dispersible in water. In addition, as recited in claim 1, the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing. In contrast the teachings of Seib and Kubik require additional processing to make the personal care emulsion.

Moreover, Kubik teaches that its polymeric binders, which may be film-formers, comprise a water-insoluble acrylate polymer. The oil film of Kubik "consists of primarily nonvolatile oils having dissolved therein small amounts of polymer binder." (Kubik, col. 2, lines 39-41). Thus, the polymers of Kubrick are <u>not</u> taught to be water dispersible, but are instead taught to be dissolvable into the oil base. Where water is added to the compositions, water-in-oil emulsions form which leave water-resistant <u>oil films</u> (and not polymer films) on the skin. (Kubik, col. 2, lines 44-46). Appellants submit that such teaching fails to disclose or suggest a water dispersible acrylate copolymer emulsion as recited in claim 1.

Regardless of the above, in the Advisory Action, at page 2, the Office appears to conclude that "the formation of an emulsion taught by Kubik by adding water to an oil soluble (water dispersible polymer) still meets the claimed composition." However, Appellants submit that the teaching in Kubik of oil soluble polymers does not necessarily also mean Kubik teaches water dispersible polymers. That is, "oil soluble" does not necessarily also mean "water dispersible." Thus, it is improper for the Office to leap to such a conclusion where Kubik is silent with respect to a teaching of "water dispersible" polymers without further explanation and articulated reasoning.

Further, at col. 4, line 66 to col. 5, line 10, Kubik teaches that its oil formulations are prepared by mixing the oil base, polymer and ultraviolet light absorbing material together and warming the mixture with slow agitation to about 140°F. Thus, the polymer is added to the oil base, then heated and mixed to dissolve the polymer in the oil. If water is added, the oil base having the polymer dissolved into it is combined to form a water-in-oil emulsion. Accordingly, it cannot be said that the copolymer of Kubik is readily dispersible in the personal care composition at any point during processing without the need for additional processing. Here, the polymer is at least heated so the polymer can dissolve in the oil, regardless of the method for making the polymer e.g. by bulk or emulsion.

Furthermore, as noted by the Office at page 6 of the Office Action, Kubik discloses that its soluble polymers include alkyl esters of 6 to 18 carbon atoms and exclude lower alkyl esters, implying that lower alkyl esters impart oil insoluble characteristics to the composition. In contrast, Appellants invention, as recited in claim 1, states that the copolymer emulsion has essentially no hydrophobic monomers having an alkyl group of greater than or equal to C8. As indicated in Appellants' specification, the acrylates copolymers "exclude those having more than trace amounts of hydrophobic monomers which contain an alkyl group of greater than or equal to C6, more particularly C8." (Specification at page 3, lines 20-22). Thus, where Kubik teaches excluding the use of lower alkyl groups in its polymers, Appellants' claimed

invention, on the other hand, excludes copolymers having more than trace amounts of higher alkyl monomers.

Accordingly, even though there is a slight overlap in the number of carbon atoms, Appellants submit that Kubik, when read as a whole, would have led one of ordinary skill in the art away from the use of polymers having lower alkyl groups. That is, the teachings of Kubik would have pointed one of ordinary skill in the art to use higher alkyl groups to achieve Kubik's requisite solubility parameter. For example, at col. 3, lines 56-61, Kubik states, "[e]sters wherein the alkyl group contains less than four carbon atoms may be included in small amounts, e.g. less than 10 mole percent. However, in order to achieve the requisite solubility parameter, the polymers should generally not contain a significant amount of lower alkyl ester monomers."

Accordingly, Appellants submit that Kubick would also thus teach away from Seib, which is directed to lower alkyl groups. Such lower alkyl groups, if included in the composition of Kubik, would not be expected to function in Kubik because these lower alkyl group polymers would not be soluble in the base oil.

Finally, Applicants submit that the polymers of Kubik are taught to have 50-95 mole% of the alkyl ester monomer, whereas based on claim 1, the upper limit of Appellants' claimed invention about 41 mole % of the butyl acrylate. Thus, if one calculated the amount of a C6 monomer ester based on the limits of claim 1, the most one could calculate for the copolymer is 10 mole %. Hence, not only does Kubik teach longer chains, Kubik further teaches using much higher levels of the alkyl ester monomer than that of the instantly claimed invention.

Accordingly, for at least all of the above reasons, independent claim 1 is patentably distinguishable over the Sieb either alone or in its combination with Kubik. Claims 2, 8-10, 26-29 are also patentable over Seib in view of Kubik for at least the reasons that claim 1, from which they depend, is patentable, but may be separately patentable for additional reasons as well.

C. Rejection of Claims 1, 2, 8-10 and 27-29 under 35 U.S.C. § 103(a) based on Cannell in view of Seib and Kubik

All pending claims stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,221,389 ("Cannell") in view of Seib and Kubik. Seib and Kubik have been discussed above. Cannell is being asserted as teaching aqueous carrier systems based on organic phospholipids capable of forming bilayers in aqueous solutions, nonionic surfactants, and amphoteric surfactants, wherein the carrier systems allow water-insoluble polymers to be incorporated into aqueous solutions (col. 1, lines 12-18). The compositions of Cannell include at least one organic phospholipid, at least one amphoteric surfactant and at least one nonionic surfactant (col. 2, lines 50-56). The Office asserts that Cannell teaches water-insoluble polymers that are unneutralized or partially neutralized. The Office acknowledges, however, that Cannell does not teach the claimed polymers and their water proofing or film forming effect. (Office Action, page 11).

D. Response to Rejection of Claims 1, 2, 8-10 and 27-29 under 35 U.S.C. § 103(a) based on Cannell in view of Seib and Kubik

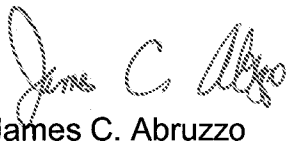
Appellants submit that, based on the Office's own admission, Cannell does not make up for the deficiencies of either Seib or Kubik, as argued above. Accordingly, Appellants' invention, as recited in claim 1, is distinguishable over Cannell in view of Seib and Kubik at least for the reasons set forth above with respect to Seib and Kubik. Appellants' submit, therefore, that claim 1 is patentable over the combination of Cannell, Seib and Kubik for at least those reasons.

Claims 2, 8-10, 26-29 are also patentable over Cannell, Seib and/or Kubik, either alone or in their combination, for at least the reasons that claim 1, from which they depend, is patentable, but may be separately patentable for additional reasons as well.

IX. CONCLUSION

In view of the arguments presented herein Appellant respectfully submits that the appealed claims stand improperly rejected. The rejection of the appealed claims of record should be reversed with instructions to allow these claims over the cited references. Such action is hereby respectfully requested.

Respectfully submitted,



James C. Abruzzo
Attorney for Appellant(s)
Reg. No. 55,890

Akzo Nobel Inc.
Legal, IP & Compliance
120 White Plains Road, Suite 300
Tarrytown, NY 10591
(914) 333-7448

X. CLAIMS APPENDIX

1 A personal care composition comprising a water-proofing effective amount of a water dispersible acrylate copolymer emulsion having essentially no hydrophobic monomers having an alkyl group of greater than or equal to C8,

wherein the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing,

wherein the acrylate copolymer comprises from about 38% to about 48% butyl acrylate, from about 39% to about 49% methyl methacrylate, and from about 8% to about 18% methacrylic acid, by weight of the copolymer.

2 The composition of claim 1, wherein the acrylate copolymer is anionic at a pH above about 4.

8. The composition of claim 1 wherein the composition is a suncare composition.

9. The composition of claim 1 wherein the acrylate copolymer is not neutralized.

10. The composition of claim 1 wherein the composition is a skin care composition.

27. The composition of claim 1 wherein the composition is an emulsion.

28. The composition of claim 1 further comprising an anionic surfactant.

29. The composition of claim 1 wherein the acrylate copolymer is in the form of a 45% polymer-in-water emulsion.

XI. Evidence Appendix

None.

XII. Related Proceedings Index

None.